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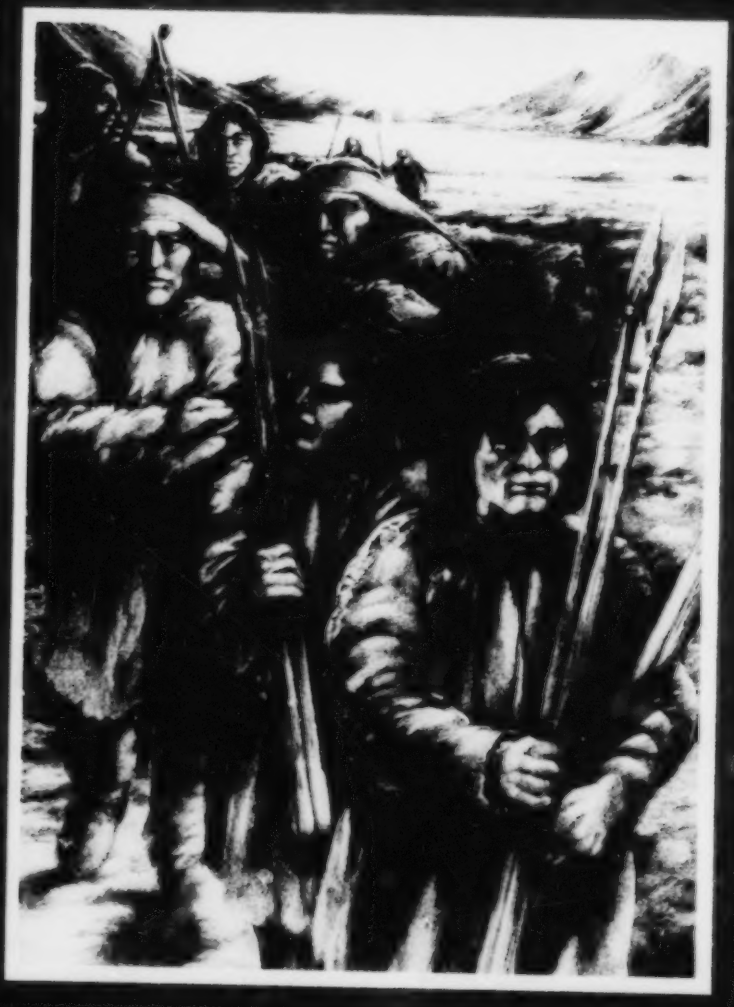
Historic Resources

MANITOBA'S FIRST EXPLORERS



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MANITOBA'S FIRST EXPLORERS

Introduction

The first people to discover and explore the area now known as Manitoba were not, of course, Europeans. Manitoba's first explorers were ancestors of Native people living in North America today. Unlike Europeans who arrived many thousands of years after them, the first Native explorers entered Manitoba when the land was uninhabited by other human beings. Its discovery and initial exploration dates between 11,500 and 11,000 years ago, when Manitoba looked very different from the way it does today. What exactly did the first explorers discover?

The Natural Setting

Deglaciation

Twelve thousand years ago, most of Manitoba was covered with glacial ice and completely uninhabited. But even at that time, the irreversible retreat of this massive glacier was well under way.

By 11,700 years ago, the ice front had melted back far enough to expose Turtle Mountain, the southernmost upland or "mountain" in Manitoba. As the ice continued to melt, large amounts of earth and rocks, known as **till**, were deposited to make what are now termed the Boissevain and Assiniboine River plains. These level-to-gently-rolling plains are characterized by hills and depressions, the latter often filled with water to form sloughs and potholes.

When the ice front remained stationary, glacial debris was dumped around its edges in linear ridges called **end moraines**. These stand out today as conspicuous lines of rough to hilly terrain rising above the nearby till plains. Good examples of end moraines in southern Manitoba are the Pembina, Tiger and Brandon hills (Figure 1).

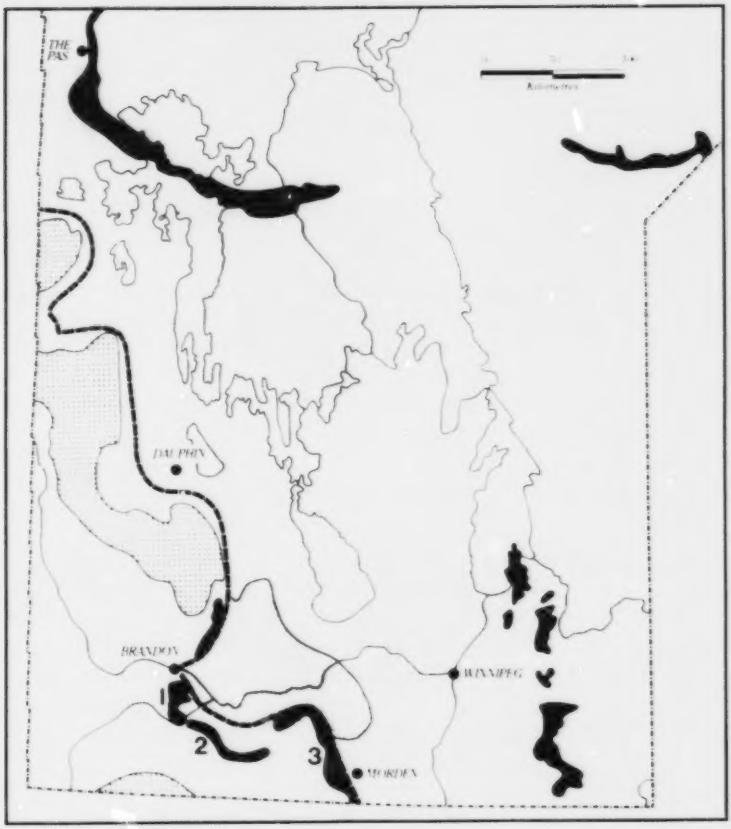

Figure 1. Some important Ice Age features in southern Manitoba. The black areas are end moraines, including the Brandon (1), Tiger (2) and Pembina hills (3). Note the distribution of hummocky disintegration moraine (stippled area) on the uplands west of the Manitoba Escarpment (heavy dashed line). From Teller, 1984.

The glacier's front would not have been a huge wall of ice, but rather an irregular slope cut by rivers and crevasses filled with glacial debris. In the Turtle and Riding mountains, portions of the ice sheet separated from the main glacier and melted in place, becoming **stagnant** or dead. As the stagnant ice melted, debris accumulated on the ground surface, protecting the underlying ice from the sun's heat. Where debris was thick, the underlying ice melted slowly. Where it was thin, melting proceeded more rapidly.

It took 3,000 years for the dead ice to melt completely. Meltwater poured across the exposed surfaces of the ice, forming channels, crevasses and hollows. As the surface of the glacier became more and more irregular, muddy debris flowed into the potholes, ponds and sloughs. Because this landscape was formed by the disintegrating ice sheet, and is characterized by numerous hills, hummocks and the depressions between them, it is referred to as **hummocky disintegration moraine**. This contrasts with the more gently contoured **ground moraine**, which forms the surface of the surrounding till plains.

Water

As active ice blocked local drainage in the river valleys, **proglacial lakes** — cold, deep, meltwater lakes — formed along the glacier's edge in low-lying areas. The greatest of these lakes in western Manitoba was glacial Lake Souris, covering a large area west and north of Turtle Mountain. As the ice melted northward, channels opened and the proglacial lakes drained. They left behind flatlands of varying sizes; the largest in western Manitoba is now called the Souris Basin. Although large, it was small compared to the gigantic glacial Lake Agassiz and its basin that formed in later millennia.

In addition to ponds, sloughs and lakes, southwestern Manitoba was cut by river valleys known as **meltwater channels**, spillways for the huge volumes of frigid meltwater cascading off the glacier and flowing out of the proglacial lakes. The two most important meltwater channels in southwestern Manitoba were the Pembina and, later, Assiniboine rivers (Figure 2). Both rivers flowed into glacial Lake Agassiz, the waters of which filled the Manitoba Lowlands east of the Escarpment. Today these rivers meander through wide valleys; since they are small relative to the size of their valleys, they are called **underfit streams**. Between 11,500 and 11,000 years ago, however, their kilometre-wide valleys were filled with meltwater.

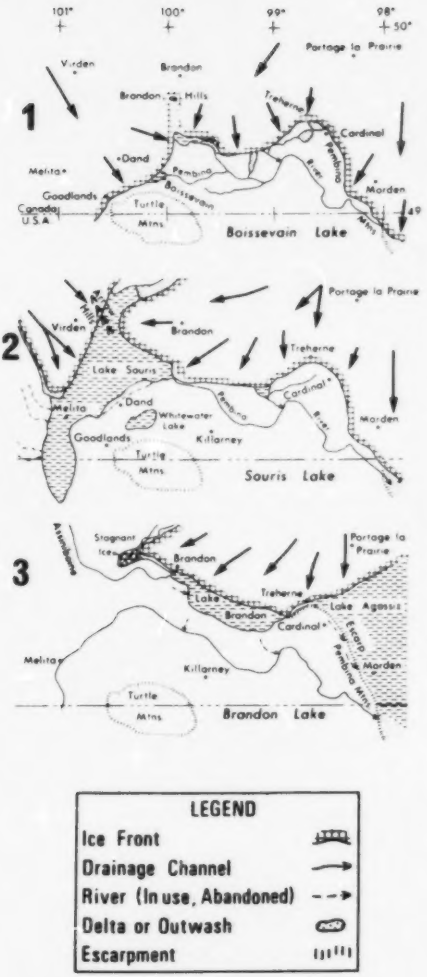

Figure 2. Three stages of late glacial environmental history in southwestern Manitoba, c. 11,500 - 11,100 years ago: (1) Boissevain Lake stage; (2) Souris Lake stage; (3) Brandon Lake stage. These stages are named after glacial lakes that formed and subsequently disappeared as the ice sheet "retreated." Note the development of the Assiniboine and Pembina rivers, major components of the region's early drainage history. The large arrows indicate the southern edge of the glacier. Adapted from Michalyna, Podolsky and Gardiner, Soils of the Brandon Region Study Area.

About 11,000 years ago, when the Pembina valley ceased to be a glacial spillway, all the water flowing through the Souris and Assiniboine river valleys emptied into Lake Agassiz at a point east of Brandon, forming a huge sandy deposit called the Assiniboine Delta.

Climate

At the time of its discovery between 11,500 and 11,000 years ago, Manitoba was abundantly watered by potholes, sloughs, proglacial lakes and glacial spillways. The climate was as cool, if not cooler, than it is now. It was typified by a relatively high annual precipitation (13-25 cm more than today), low evaporation and a maximum air temperature of 26° C, as compared with 28° C today. Summers were cooler than they are now; the winters, somewhat milder.

Vegetation

The plentiful supply of minerals and water left by the retreating glacier led to a rapid growth of vegetation. The different ground surfaces promoted great plant variety, producing a mosaic of plant communities each reflecting a different habitat.

In some areas, open tundra-like vegetation bordered the ice front, while elsewhere spruce trees grew at the glacier's edge. In other places, such as parts of the sandy, well-drained Souris Basin, tundra was interspersed with spruce trees, forming a parkland or semi-open woodland. Closed spruce forests covered the Boissevain and Assiniboine River plains and north-facing slopes in areas of higher elevation. Poplar woodlands covered the warmer, south-facing slopes of hilly areas.

On the hummocky disintegration moraine atop Turtle and Riding mountains, thick spruce forests grew on the till-covered ice. When the ice melted, large pits formed and collapsed, leaving trees tilted in all directions. Lakes littered with dead trees occupied the low areas. Eventually, the ground surface became stable again, and the forests and shrubs re-established themselves.

Animals

From a big game hunter 's standpoint, animal life would have been the most important part of Manitoba's natural environment at the time of discovery and first exploration. During the height of the last

Ice Age, about 18,000 years ago, a wide variety of animals inhabited the interior of North America south of the ice sheet. As the glacier melted, the newly-vacated countryside opened to animals previously found only to the south and west.

Some large animals, or **megafauna**, probably lived in southwestern Manitoba between 11,500, and 11,000 years ago. Among them were the mammoth, mastodon, tundra and woodland musk ox (the latter now extinct), an early form of moose, camel, ground sloth, giant beaver, and both woodland and barren ground caribou. By 11,000 years ago, the mammoth and early moose had died out — the mammoth, because the warming climate restricted its preferred tundra-like habitat; the early moose, because the modern form of moose adapted more readily to the changing environment.

Between 11,500 and 11,000 years ago, the big game population in southwestern Manitoba was probably not very large. The extensive spruce forests in the province at that time would not have supported large animal herds as well as the grasslands in the south and west.

The Clovis Culture

The earliest evidence for human living in Manitoba relates to a culture called **Clovis**. Clovis is not a Native tribal name; it is an archaeological identification, referring to the place in New Mexico where distinctive Clovis artifacts were first discovered in 1932.

Clovis people hunted and gathered wild animals and plants, using tools of stone, bone, wood and animal hide. The Clovis **tool kit**, or basic range of implements, contained **bifacially worked** stone knives, formed by removing flakes from both sides or **faces** of the tool; side and end scrapers for working hides; spokeshaves for forming wooden shafts; gravers for working leather; spear and lance points for hunting; and bone and ivory foreshafts for attaching spear points to shafts (Figures 3 and 4).

On the high plains of central, southern and western North America, the Clovis economy was based mainly on hunting mammoth and other large game, such as bison and horse. It is known that Clovis people adapted well to the many habitats found south of the ice sheet, because Clovis points have been found in virtually every state of the United States and most Canadian provinces.

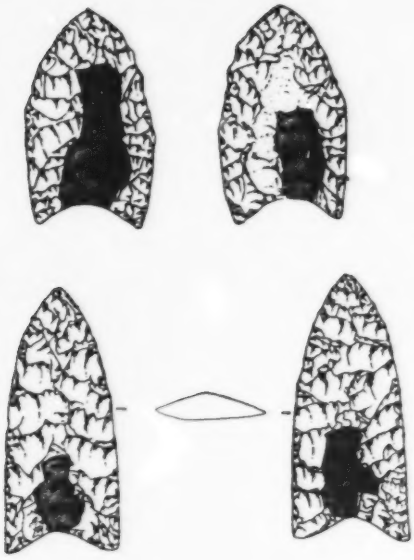

Figure 3. Clovis spear points from southwestern Manitoba showing the distinctive flutes, or long, narrow flakes (shaded areas), extending about half the length of the points.

Clovis hunters were nomads. They ranged on foot over extensive areas, searching for food and materials to manufacture tools. Most known Clovis sites are at the edges of former marshes, lakes or streams, suggesting that **miring**, or trapping animals in deep mud, may have been among their hunting techniques (Figure 5).

Stone knives were made and resharpened to butcher slain animals, as revealed by discarded piles of stone chips often found at these kill sites. Campsites near kill and butchering areas frequently contain broken or discarded spear points, as well as scraping tools used during wood-, bone- and hide-working activities.

The Clovis people revered and respected their dead, as demonstrated by the discovery of a cache of finely made Clovis points in a cremation burial in Montana.

Band Society

By studying all aspects of contemporary nomadic hunting societies, archaeologists believe they can determine how similar prehistoric groups would have lived. It is thought that Clovis people were

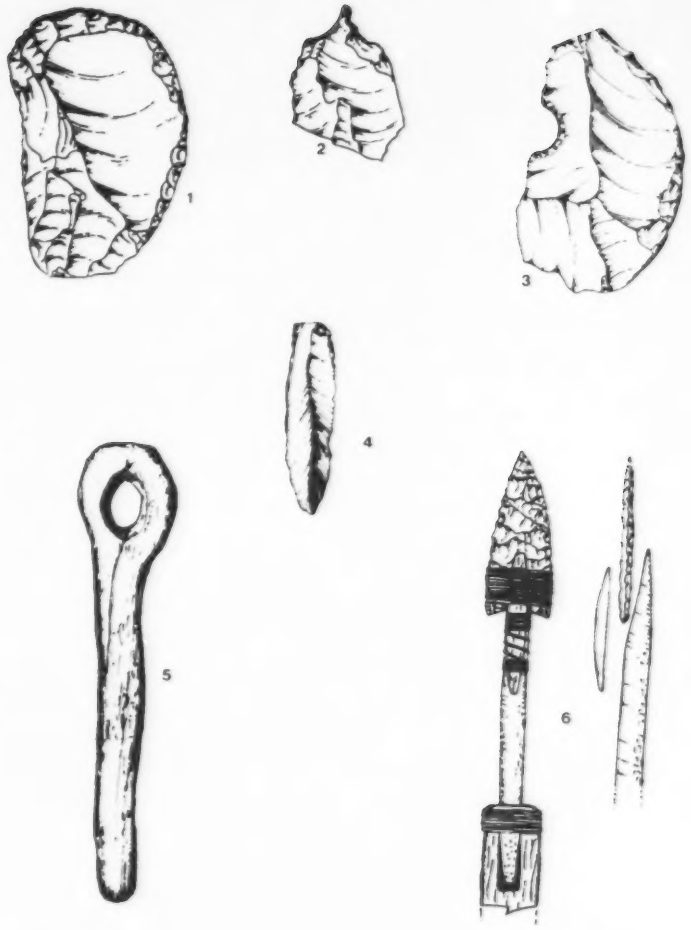

Figure 4. The Clovis tool kit: (1) scraping tool for working hides; (2) graver or perforator for working leather; (3) spokeshave with notch for making wooden shafts; (4) flake or blade; (5) shaft wrench for straightening spear shafts; (6) spear point attached to shaft and separated pieces of spear and foreshaft.

Figure 5. A Clovis mammoth kill in which the animal is mired in mud, while hunters attack it with spears and large rocks.

organized into a community pattern that anthropologists call a **band society**. Today's band societies are generally hunter-gatherers, meaning that food is hunted, gathered or collected from wherever it may be found. Consequently, almost all band societies are nomadic, moving from place to place in regular, seasonal patterns, following migratory animals or using seasonally available plants or animals.

Bands are typically small in size, with a population density ranging from a maximum of one person per eight square kilometres to a minimum of one person per 80 square kilometres. The size of a band is determined by its ability to get food and the type of technology it uses. Band size also varies from season to season, depending on the amount of food available at any particular time or place. Numbers commonly range from a single family to groups of 50 or more. If resources are abundant, separate bands can come together for a time, forming a large "macro-band."

Private ownership of resources is alien to band societies. Among hunter-gatherers, sharing is the rule; resources belong to the entire group. For example, all members of a band share in the distribution of game, regardless of whether they have been personally involved in the hunt.

Band political organization is flexible and informal. There is no need for a distinct or separate political life, nor for a government or legal system beyond the direct authority of family heads and part-time leaders. Decisions are made by elders with input from any member who has knowledge to share. Decisions such as when and where a camp should be relocated, how a hunt should be carried out, when a ritual or ceremony should be conducted, or what kind of relationship should be set up with neighbouring groups, are either made by the community at large or by the member best suited to do so.

Individual leadership comes about by virtue of a person's earned reputation within the community as someone who is competent, honest and has good judgment.

Manitoba's First Explorers

It is unlikely that the first people to live in Manitoba originated in some distant place and moved into the province as it emerged from beneath the ice sheet. In all likelihood, these people were members of an expanding population whose descendants gradually occupied new territories when the glacier retreated.

As a basis for exploration, the process of **budding-off** probably brought the first people to Manitoba over 11,000 years ago. "Budding-off" refers to the departure of a family, or group of families, from a parent band to establish a new community.

Cultural factors, such as the desire for familiar surroundings, would have worked against the budding-off process. Social relationships within the parent band, such as strong family ties and commitments to help one another, would also have prevented colonizing groups from moving far away. While people have always moved into uninhabited areas, they seldom move so far away that they lose contact, even temporarily, with the main population. The first explorers of Manitoba would have wanted to remain part of their familiar social and geographical environment. Fear of the unknown, reinforced perhaps by supernatural beliefs and taboos, probably would have discouraged the exploration and colonization of new territories.

Opposing these "stay-at-home" tendencies would have been other factors, particularly ones involving hunters' attitudes toward the chase. Hunters of all cultures seem motivated by curiosity and desire to explore the hunting potential of new terrain. Although this attitude may be entirely casual, the "budding-off" process usually occurs well before a band's established territory has been "hunted out."

In addition, the motivation to expand into the North American frontier may have been influenced by other events. A drastic decline of large Ice Age animals in North America, culminating in the extinction of many species by 11,000 years ago, may have influenced movement into new territories. Whatever the circumstances motivating part of a band to move into new territory, certainly the new land would have been checked out by hunters and other band members for its suitability as a permanent or part-time residence.

If Manitoba's first explorers came from an area of open grassland, the new natural environment would have been quite a contrast. The province would have been covered with saturated bogs and fens; large tracts of thick spruce and mixed wood forests; sterile, proglacial lakes; massive, meltwater channels so wide and turbulent that they were impassable in summer; a chaotic mass of sloughs, swamps and tilted forests on the uplands; and, most importantly, a relatively small supply of big game animals.

The few isolated Clovis spear points recorded in Manitoba to date indicate that the first explorers were small in number and didn't stay very long. Their social connections with other groups would

have provided assistance in hunting, access to potential marriage partners, the services of healers and an opportunity to participate in group-oriented ceremonies.

Colonizing groups wanted to maintain their association with friends and kinsmen. These needs would have pressured the first explorers to leave the province frequently. Almost 1,000 years would pass before southern Manitoba received its first truly resident population, one whose members spent most of their time in the province and called it home.

References

BIRDSELL, J.B.

1957 Some Population Problems Involving Pleistocene Man. In *Population Studies: Animal Ecology and Demography*. Cold Spring Harbour Symposia in Quantitative Biology No. 22, pp. 47-69.

BROWN, J. and C. CLELAND

1968 The Late Glacial and Early Postglacial Faunal Resources in Midwestern Biomes Newly Opened to Human Adaptation. In *The Quaternary of Illinois*, edited by R. Bergstorm, pp. 114-122. University of Illinois College of Agriculture Special Paper No. 14.

CHRISTIANSEN, E.

1979 The Wisconsinan Deglaciation of Southern Saskatchewan and Adjacent Areas. *Canadian Journal of Earth Sciences* 16:913-938.

CLAYTON, L.

1967 Stagnant-Ice Features of the Missouri Coteau in North Dakota. In *Glacial Geology of the Missouri Coteau and Adjacent Areas*, edited by L. Clayton and T. Freers, pp. 25-46. North Dakota Geological Survey Miscellaneous Series No. 30.

CLAYTON, L. and S. MORAN

1982 Chronology of Late Wisconsinan Glaciation in Middle North America. *Quaternary Science Reviews* 1:55-82.

DEAL, Dwight E.

1971 *Geology of Rolette County, North Dakota*. North Dakota Geological Survey Bulletin, No. 58. Grand Forks.

EHRLICH, W.A., L.E. PRATT and E.A. POYSER

1956 *Report on Reconnaissance Soil Survey of Rossburn and Virden Map Sheet Areas*. Manitoba Department of Agriculture Soils Report No. 6. Winnipeg.

ELLIS, J.H. and W.H. SHAFER

1940 *Reconnaissance Soil Survey, Southwestern Manitoba*. Manitoba Soil Survey Report No. 3. Manitoba Department of Agriculture, Winnipeg.

ELLIS, J.H. and W.H. SHAFER
1943 *Report of Reconnaissance Soil Survey of South-Central Manitoba.* Manitoba Soil Survey Report No. 4. Manitoba Department of Agriculture, Winnipeg.

EMBER, C. and M. EMBER
1973 *Anthropology.* Appleton-Century-Crofts, New York.

FORBIS, R.
1975 The Paleoamericans. In *North America*, edited by S. Gerenstein, pp. 17-35. St. Martin's Press, New York.

GEIST, V.
1975 On Life in the Sight of Glaciers. *Nature Canada*, 4(3):10-16. Ottawa.

HARINGTON, C.R.
1970 *A Postglacial Muskox (Ovibos moschatus) from Grandview, Manitoba.* National Museum of Natural Sciences Publications in Palaeonthology, No. 2. Ottawa.

HARINGTON, C. and A. ASHWORTH
1986 A Mammoth (*Mammuthus primogenius*) Tooth from Late Wisconsin Deposits Near Emden, North Dakota, and Comments on the Distribution of Wooly Mammoths South of the Wisconsin Ice Sheets. *Canadian Journal of Earth Sciences* 23:909-918.

HAYNES, C.V.
1978 The Clovis Culture. In *Abstracts of the Fifth Biennial Meeting, September 2-4, 1978, American Quaternary Association, University of Alberta, Edmonton, Alberta,* pp. 129-132.

KLASSEN, R.
1971 Nature, Thickness and Subsurface Stratigraphy of the Drift in Southwestern Manitoba. In *Geo-Sciences in Manitoba*, edited by A.C. Turnock, pp. 253-261. Geological Association of Canada Special Paper No. 9, Toronto.

MARTIN, P. and J. GUILDAY
1967 A Bestiary for Pleistocene Biologists. In *Pleistocene Extinctions: A Search for a Cause*, edited by P. Martin and H. Wright, pp. 1-26. Yale University Press, New Haven.

MICHALYNA, W., G.P. PODOLSKY and W. GARDINER
1976 *Soils of the Brandon Region Study Area.* Manitoba Department of Municipal Affairs, Municipal Planning Branch Soils Report No. 30, Winnipeg.

MULLER-BECK, H.
1966 Paleohunters in America: Origins and Diffusion. *Science* 152(3726):1191-1210.

POST, Austin
1976 The Tilted Forest: Glaciological-Geologic Implications of Vegetated Neoglacial Ice at Litlya Bay, Alaska. *Quaternary Research* 6(1):111-117.

RITCHIE, J.C.
1983 Paleoecology of the Central and Northern Parts of the Glacial Lake Agassiz Basin. In *Glacial Lake Agassiz*, edited by J. T. Teller and L. Clayton, pp. 157-170. Geological Association of Canada Special Paper No. 26, Toronto.

SOPER, J.D.
1961 The Mammals of Manitoba. *Canadian Field-Naturalist* 75(4):171-219.

TELLER, J.
1975 The Ice Age in Manitoba. *Manitoba Nature* 16(3):4-27. Winnipeg.

TELLER, J.
1984 The Ice Age and Its Legacy. In *Natural Heritage of Manitoba: Legacy of the Ice Age*, edited by J. Teller, pp. 23-47. Manitoba Museum of Man and Nature. Winnipeg.

WARKENTIN, J.
1964 *The Western Interior of Canada.* McClelland and Stewart Ltd., Toronto.

WILMSEN, E.
1974 *Lindenmeier: A Pleistocene Hunting Society.* Harper and Row, Publishers, New York.

1974 Bone Foreshafts from a Clovis Burial in Southwestern Montana. *Science* 186(4159):147-150.